

Remarks

Applicants thank Examiner Tang for the careful examination of this application and the clear explanation of the rejections. In response, applicants amend the application as follows:

1. Applicants cancel claims 3, 5, 6, 7, and 8.
2. Applicants amend claims 1, 9, and 12. As amended, the claims distinguish over the cited references and is patentable for the reasons below:
 - I. As amended, claim 1 discloses a wafer that has a probe pad. The wafer comprises the following elements:
 - a. multiple test structures that are selectably multiplexed to the probe pad;
 - b. the selection of the individual test structure depends on an input voltage applied to the probe pad; and
 - c. the probe pad is also configured as an output pad from which response of the selected test structure to the input voltage may be taken.

Both the Freed reference and the Hubacher reference do not disclose all elements of claim 1. For example, the Freed reference does not disclose at least elements b and c. The Freed reference discloses a test structure of which the no two adjacent contacts associated with the test circuits are in the same testing circuit. The selection of the Freed test structure does not depend on an input applied to a probe pad that also function as an output pad. The Hubacher reference also does not disclose at least element b and c. The Hubacher reference discloses a test system for selectively accessing mechanically difficult to access terminals in an integrated circuit chip. It does not disclose using a probe pad both as input for selecting the circuit under test and as output pad to measure the response of the circuit to the input voltage.

Because at least elements b and c in claim 1 are not disclosed in either Freed reference or the Hubacher reference, claim 1 can not be said to be obvious in view of the references and therefore 103 rejection would be improper.

- II. Claims 2 and 4 depend on a patentable claim 1 with additional limitations. In particular, claim 2 further limits the location and the dimension of the probe pad; and claim 4 further limits the input voltage to the probe pad. Therefore, claims 2 and 4 stand patentable over the references.
- III. As amended, claim 9 discloses a scribeline test circuit that comprise the following elements:
- a. a test selector circuit located in a single scribeline portion between two adjacent die locations;
 - b. multiple test structures, also located in the single scribeline portion;
 - c. at least one probe pad, also located in the single scribeline portion, communicable to the multiple test structures;
 - d. the test selector circuit makes an electrical connection from the probe pad only to a selected one of the test structures
 - e. the selection depends on an input voltage applied at the probe pad; and
 - f. the response of the selected test structure to the input voltage may be taken from the probe pad.

Both the Freed reference and the Hubacher reference do not disclose all elements of claim 9. For example, the Freed reference does not disclose at least elements e and f. The Freed reference discloses a test structure of which the no two adjacent contacts associated with the test circuits are in the same testing circuit. The selection of the Freed test structure does not depend on an input voltage applied to a probe pad that also functions as the output pad. The Hubacher reference also does not disclose at least element e and f. The Hubacher reference discloses a test system for selectively accessing mechanically difficult to access terminals in an integrated circuit chip. It does not disclose using a probe pad both as input for selecting the circuit under test and as output pad to measure the response of the circuit to the input voltage.

Because at least elements e and f in claim 9 are not disclosed in either Freed reference or the Hubacher reference, claim 9 can not be said to be obvious in view of the references and therefore 103 rejection would be improper.

- IV. Claim 10 and 11 depend on a patentable claim 9 with additional limitations. In particular, claim 10 further limits the dimension of the probe pad; and claim 11 further limits the voltages applied to the probe pad. Therefore, claim 10 and 11 stand patentable over the references.
- V. Claim 12 as amended discloses a method for characterizing integrated circuits using multiple test structure. The method comprises the following steps:
- a. applying a selecting signal to a probe pad coupled to the multiple test structures to drive a selector circuit;
 - b. as a result, the selector circuit connects a selected one of multiple test structures to the pad; and
 - c. taking measurement of the electrical characteristics of the selected one of the multiple test structures at the probe pad.

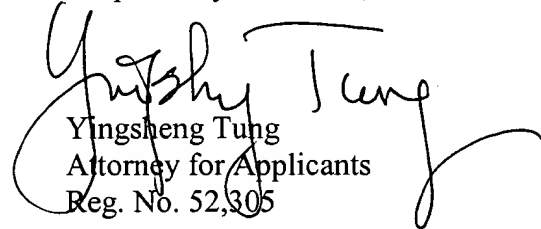
Both the Freed reference and the Hubacher reference do not disclose all elements of claim 12. For example, the Freed reference does not disclose at least element c. The Freed reference discloses a test structure of which the no two adjacent contacts associated with the test circuits are in the same testing circuit. It does not take measurement of the electrical characteristics of the selected test structure at the same probe pad where the selecting signal is applied. The Hubacher reference also does not disclose at least element c. The Hubacher reference discloses a test system for selectively accessing mechanically difficult to access terminals in an integrated circuit chip. It also does not disclose using a probe pad both as input for selecting the circuit under test and as output pad to measure the electrical characteristics of the selected test structure.

Because at least element c in claim 12 is not disclosed in either Freed reference or the Hubacher reference, claim 12 can not be said to be obvious in view of the references and therefore 103 rejection would be improper.

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In summary, applicants respectfully submit that the application is in allowable form and all claims as amended distinguish over the cited references. Applicants respectfully request that the application be further examined and all claims pass to issuance.

Respectfully submitted,



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